

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing:

04 March 1999 (04.03.99)

International application No.:

PCT/US98/17232

Applicant's or agent's file reference:

2554-3

International filing date:

20 August 1998 (20.08.98)

Priority date:

22 August 1997 (22.08.97)

Applicant:

FUNAMIZU, Hidenori et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International preliminary Examining Authority on:

20 August 1999 (20.08.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☐ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer:

J. Zahra

Telephone No.: (41-22) 338.83.38

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year)

01 February 2000 (01.02.00)

International application No.

PCT/US98/17232

Applicant's or agent's file reference

2554-3

International filing date (day/month/year)

20 August 1998 (20.08.98)

Priority date (day/month/year)

22 August 1997 (22.08.97)

Applicant

FUNAMIZU, Hidenori et al

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

20 August 1998 (20.08.98)

☐ in a notice effecting later election filed with the International Bureau on:**CORRECTED
VERSION**2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des C lombettes
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F. Baechler

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EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/17232

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 31/55; C07D 267/14, 267/16, 281/10

US CL :514/211; 540/488, 490, 491

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/211; 540/488, 490, 491

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, CAS Online

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,441,950 A (COLLINS et al.) 15 August 1995, see entire document.	1, 6, 7, 16 and 25
X --- Y	US 5,449,675 A (CHANDRAKUMAR et al.) 12 September 1995, see entire document.	1, 6, 7, 16 and 25 ----- 1, 6-10, 16 and 25
X --- Y	EP 0 411 751 A1 (BEECHAM GROUP P.L.C.) 06 February 1991, see examples E18, E19a and E19b.	1-7, 16 and 25 ----- 1-10, 16 and 25



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

A	document defining the general state of the art which is not considered to be of particular relevance	*T*	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
B	earlier document published on or after the international filing date	*X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
L	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
O	document referring to an oral disclosure, use, exhibition or other means	*Z*	document member of the same patent family
P	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

10 NOVEMBER 1998

Date of mailing of the international search report

18 DEC 1998

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

MUKUND SHAH

Telephone No. (703) 308-1235

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/17232

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-25

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

12
REC'D 11 JAN 2000

WIPO

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Applicant's or agent's file reference 2554-3	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US98/17232	International filing date (day/month/year) 20 August 1998 (20.08.1998)	Priority date (day/month/year) 22 August 1997 (22.08.1997)
International Patent Classification (IPC) or national classification and IPC IPC(7): A61K 31/55; C07D 267/14, 267/16, 281/10 and US Cl.: 514/211; 540/488, 490, 491		
Applicant KAKEN PHARMACEUTICAL CO., LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 20 August 1998 (20.08.1998)	Date of completion of this report 09 November 1999 (09.11.1999)
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer Brenda Coleman Telephone No. (703) 308-1235

Form PCT/IPEA/409 (cover sheet)(July 1998)

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☒ the description:
pages 1-73 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the claims:
pages 74-88, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the drawings:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application N .

PCT/US98/17232

III. N on-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The question whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of:

- ☐ the entire international application,
☒ claims Nos. 11-14, 16-24 and 26-32

because:

- ☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require international preliminary examination (*specify*):

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 11-14 and 16-24 are so unclear that no meaningful opinion could be formed (*specify*):

Claims 11-14 and 16-24 are improper multiple dependent claims under PCT Rule 6.4(a).

- ☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.
☒ no international search report has been established for said claims Nos. 26-32

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)	Claims <u>8-10 and 15</u>	YES
	Claims <u>1-7 and 25</u>	NO
Inventive Step (IS)	Claims <u>15</u>	YES
	Claims <u>1-10 and 25</u>	NO
Industrial Applicability (IA)	Claims <u>1-10, 15 and 25</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS (Rule 70.7)

Claims 1, 6, 7 and 25 lack novelty under PCT Article 33(2) as being anticipated by Collins et al. (US Patent Number 5,441,950). Collins teaches compounds of the instant invention where A is dibenzoxazepine, R is hydrogen, B is hydrogen or methyl and D is 4-pyridinylmethylamino, 2-pyridinylethylamino, 4-pyridinylamino or 2-methoxymethylamino. See examples 5-8, 15, 16, 35-38 and 41-42.

Claims 1, 6, 7 and 25 lack novelty under PCT Article 33(2) as being anticipated by Chandrakumar et al. (US Patent Number 5,449,675). Chandrakumar teaches compounds of the instant invention where A is dibenzoxazepine, R is hydrogen, B is hydrogen or methyl and D is 4-pyridinylmethylamino, 2-pyridinylethylamino, 4-pyridinylamino or 2-methoxymethylamino. See examples 5-8, 15, 16, 35-38 and 41-42.

Claims 1, 6-10 and 25 lack an inventive step under PCT Article 33(3) as being obvious over Chandrakumar et al. (US Patent Number 5,449,675). The generic structure of U.S. '675 encompasses the instantly claimed compounds (see Formula I, column 2) and by the same process (see column 11) as claimed herein. Examples 5-8, 15, 16, 35-38 and 41-42 differ only in the nature of the X, Y, Z, R, W, D, E, m, p, q and n substituents.

Claims 1-7 and 25 lack novelty under PCT Article 33(2) as being anticipated by BEECHAM GROUP P.L.C., EP 0 411 751. BEECHAM GROUP P.L.C. teaches the compounds of the instant invention where A is benzothiazepine-ethyl, R is hydrogen, B is phenylmethyl and D is -NH-CH(isobutyl)-C(=O)-NH-CH(cyclohexylmethyl)-CH(OH)-CH₂-C(=O)-NH-(CH₂)₃-imidazole. See examples E18, E19a and E19b.

Claims 1-10 and 25 lack an inventive step under PCT Article 33(3) as being obvious over BEECHAM GROUP P.L.C., EP 0 411 751. The generic structure of EP '751 encompasses the instantly claimed compounds (see Formula I, page 3) and by the same process (see pages 8-9) as claimed herein. Examples E18, E19a and E19b differ only in the nature of the Z1, Z2, Z3, Z4, Z5, Ra, Rb, E, R1, R2, R3, p, Rz, q, A, s and R4 substituents.

Claim 15 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the species claimed herein.

Claims 1-10 and 25 meet the criteria set out in PCT Article 33(4), for industrial applicability.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/17232

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 31/55; C07D 267/14, 267/16, 281/10

US CL :514/211; 540/488, 490, 491

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/211; 540/488, 490, 491

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, CAS Online

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,441,950 A (COLLINS et al.) 15 August 1995, see entire document.	1, 6, 7, 16 and 25
X — Y	US 5,449,675 A (CHANDRAKUMAR et al.) 12 September 1995, see entire document.	1, 6, 7, 16 and 25 — 1, 6-10, 16 and 25
X — Y	EP 0 411 751 A1 (BEECHAM GROUP P.L.C.) 06 February 1991, see examples E18, E19a and E19b.	1-7, 16 and 25 — 1-10, 16 and 25

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 10 NOVEMBER 1998	Date of mailing of the international search report 18 DEC 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer <i>Mukund Shah</i> MUKUND SHAH Telephone No. (703) 308-1235